REMARKS/ARGUMENTS

All pending claims 1-20 stand rejected over the teachings of US Patent 5,838,924 granted to Anderson et al. either alone or in combination with one or more of US Patent 6,731,832 granted to Alvarez, US Patent 6,657,925 granted to Shiragaki and US Patent 6,643,254 granted to Kajitani.

All claims 1-20 are hereby canceled, in favor of new claims 21-33.

New Claim 21 now explicitly calls for provisioning a **dedicated** Management Control Flow ("MCF") in each of an active Path Protection Group ("PPG") and a corresponding protect PPG (emphasis added). Support for the dedicated MCF in Claim 21 is found throughout the originally-filed specification, including, for example, originally-filed Claim 6, page 28 at lines 17-23. See also FIG. 6A which shows a single MCF 618 that is dedicated for use with each of two VFs 610 and 612 in PPG 606.

New Claim 21 is believed to be patentable over the above-identified patents either alone or in some combination with one another, for the reasons discussed next.

First, Anderson fails to disclose or suggest use of a dedicated MCF for multiple VFs in a PPG. Instead Anderson teaches that multiple OAM cells are generated for each VP connection. See Anderson's column 3 lines 24-25, column 4 lines 38-39, column 6 lines 8-10, column 6 lines 26-28, column 6 lines 40-42 and column 9 lines 52-53. The use of multiple OAM cells for multiple VPs which are grouped into a single VPG is inefficient, because additional CPU power and memory is required in both generating and discarding redundant OAM cells. For example, if there are 100 VPs in Anderson's VPG then 100 OAM cells are generated and transmitted.

Anderson does disclose that detection of a single OAM cell for a VPI in a VPG causes a switchover. However, there is no indication by Anderson or by any of the above-identified patents that generation of redundant OAM cells is to be avoided. In the above-described example, if 100 OAM cells are received, while Anderson's switchover is triggered by the first OAM cell, an additional 99 OAM cells are to be received and must be discarded. Hence, if it becomes necessary to switch back to using the original VPG (on recovery from the failure), Anderson's method needs to wait for receipt of OAM cells from all VPs in the VPG indicating that the fault has been cleared, which makes his method

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slower than Claim 21 (because only a single MCF is used per PPG regardless of the number of VFs therein). Anderson's need, to process redundant OAM cells on failure as well as on recovery, makes his method use more memory and CPU resources, as compared to Claim 21. For these reasons, Anderson's method is not scalable.

In contrast, the method of Claim 21 is more efficient and scalable because generation of redundant PSS is avoided when signaling the failure of a PPG to which an MCF (that carries the PSS) is dedicated, regardless of the number of VFs contained in the PPG. Applicants submit that use of a **dedicated MCF** at the PPG level for multiple VFs, as recited in Claim 21, is worthy of patent protection.

Second, Claim 21 distinguishes over Anderson's patent by explicitly requiring a **physical path** based grouping of VFs into each PPG which is nowhere disclosed or suggested by Anderson. Specifically, Anderson indicates that his VPs are grouped into VPGs if they share a common source node (see column 2, lines 62-65). For example, two VCs that originate in a given node and are provisioned in a common VP must belong to a common VPG. These two VCs may travel to an adjacent node over a given link from the given node. After passing through the adjacent node, the two VCs may go to different destinations on different physical paths (although these two VCs continue to be in the same VPG because they have the same VPI and originate at the common source node).

In the just-described example, a failure in a VP's path downstream of the adjacent node causes Anderson's method to switch the entire VPG at the source, thereby causing both VCs to be switched regardless of which of the two VCs was affected by the failure. To re-state, in Anderson's method both VCs are switched although one of them may not be affected by a failure that affects the other. In contrast, Claim 21's PPGs are set up to contain only VFs that share a physical path from source to destination. If even one VF of Claim 21 is affected by a failure, then all VFs in a PPG containing the affected VF are also affected because all VFs in the PPG share the same physical path. Therefore Claim 21's switching of a PPG only switches VFs that are affected by the failure.

In view of the above arguments, Applicants submit that Claim 21 is patentable over the teachings of Anderson either alone or in combination with the other patents described above. Claims 22-33 depend either directly or indirectly from Claim 21 and are therefore also patentable for at least the same reason as Claim 21.

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The Examiner objected to the specification in paragraph 1 on page 2 of the above-identified Office Action. Accordingly, Applicants have revised the specification as suggested by the Examiner. Applicants respectfully thank the Examiner for identifying these errors.

For the above reasons, Applicants respectfully request allowance of all pending claims. Should the Examiner have any questions concerning this response, the Examiner is invited to call the undersigned at (408) 982-8200, ext. 3.

Via Express Mail Label No.
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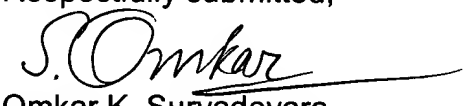
Respectfully submitted,



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